

holding the cooled forged third material in a tempering temperature area of a furnace at a temperature in a range of 500 - 700 °C; and

cooling the cooled forged material to a normal temperature by natural cooling, so that carbon and nitrides that include the second material may precipitate on the first material.

4. (New) The method of claim 3, wherein said holding comprises holding the cooled forged material for 30-60 minutes.

IN THE ABSTRACT:

Please replace the abstract with the attached substitute abstract.

ABSTRACT

The objective of the present invention is to provide a forging method that improves workability in machining, by turning the metallographical structure of products subject to impact load to a fine ferrite-perlite structure, without adopting the method of quenching and tempering, to obtain, as strength, a yield point (Y-P value) exceeding that obtained by the method of quenching and tempering, and making the tensile strength (TS) smaller compared with the method of quenching and tempering. A material to be forged has at least one kind of group 5 metal added thereto and is heated to a temperature suitable for hot forging. After forging to prescribed shape, cooling, and holding for a prescribed set time in a furnace at a tempering temperature, the material is further cooled to normal temperature by natural cooling.